

MAEDA et al.
Serial No. 10/714,935
Response to Office Action dated April 8, 2008

RECEIVED
CENTRAL FAX CENTER
JUL 0 8 2008

AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions, and listings, of claims in the application.

Listing of Claims:

Claim 1 (Previously Presented): A shift register block comprising:

at least one system of a first shift register comprising a plurality of spaced-apart, cascade-connected unit circuits and outputting an input signal in response to a clock signal, the first shift register sequentially outputting a selection signal from output-stages comprised of the unit circuits,

wherein:

a first circuit which is not one of the unit circuits of the first shift register is disposed in the physical space between a unit circuit of a preceding output stage and a unit circuit of a following output stage; and

the first circuit is not involved in operation of the first shift register so that an output of the first circuit is not supplied to any of the unit circuits of the first shift register.

MAEDA et al.

Serial No. 10/714,935

Response to Office Action dated April 8, 2008

Claim 2 (Original): The shift register block as set forth in claim 1, wherein:

the unit circuits are flip-flop circuits.

Claim 3 (Previously Presented): The shift register block as set forth in claim 1, wherein:

the first circuit is a processing circuit which uses output of one of the unit circuits.

Claim 4 (Previously Presented): The shift register block as set forth in claim 1, wherein:

the first circuit is a unit circuit for a second shift register different from the first shift register.

Claim 5 (Previously Presented): The shift register block as set forth in claim 1, wherein:

the first circuit is a processing circuit which uses output of one of the unit circuits, a unit circuit for a second shift register different from the first shift register, or a processing circuit which uses output of the unit circuit for the second shift register.

Claim 6 (Previously Presented): The shift register block as set forth in claim 4, wherein:

circuits of the first and second shift registers.

Claim 7 (Previously Presented): The shift register block as set forth in claim 5, wherein:

signal paths for the first and second shift registers are provided separately for each of the first and second shift registers on both sides of a circuit alignment of the unit circuits of the first and second shift registers.

Claim 8 (Previously Presented): A signal line driving circuit, comprising:
a shift register block for sequentially outputting a selection signal, so as to drive a plurality of signal lines,

wherein:

the shift register block comprises:

at least one system of a first shift register comprising a plurality of spaced-apart, cascade-connected unit circuits and outputting an input signal in response to a clock signal, the first shift register sequentially outputting a selection signal from output-stages comprised of the unit circuits, wherein a first circuit which is not one of the unit circuits of the first shift register is disposed in the physical space between a unit circuit of a

MAEDA et al.
Serial No. 10/714,935
Response to Office Action dated April 8, 2008

preceding output stage and a unit circuit of a following output stage and the first circuit is not involved in operation of the first shift register so that an output of the first circuit is not supplied to any of the unit circuits of the first shift register.

Claim 9 (Previously Presented): A data signal line driving circuit comprising:
a sampling section for driving a plurality of data signal lines by sampling image data from an image signal according to a selection signal sequentially outputted from a shift register block so as to transfer the image data to the data signal lines,

wherein:

the shift register block comprises:

at least one system of a first shift register comprising a plurality of spaced-apart, cascade-connected unit circuits and outputting an input signal in response to a clock signal, the first shift register sequentially outputting a selection signal from output-stages comprised of the unit circuits, wherein a first circuit which is not one of the unit circuits of the first shift register is disposed in the physical space between a unit circuit of a preceding output stage and a unit circuit of a following output stage and the first circuit is not involved in operation of the first shift register so that an output of the first circuit is not supplied to any of the unit circuits of the first shift register.

MAEDA et al.

Serial No. 10/714,935

Response to Office Action dated April 8, 2008

Claim 10 (Original): The data signal line driving circuit as set forth in claim 9, wherein:

the sampling section carries out sampling of image data of divided image signals which are generated by dividing the image signal according to an alignment order of the data signal lines, the sampling section simultaneously carrying out sampling of the image data of the divided image signals.

Claim 11 (Previously Presented): The data signal line driving circuit as set forth in claim 9, wherein:

the image signal is an analog signal, and the first circuit comprises at least one of a waveform shaping circuit, a buffer circuit, a sampling circuit, and a level shifter circuit, which use outputs of the unit circuits.

Claim 12 (Previously Presented): The data signal line driving circuit as set forth in claim 9, wherein:

the image signal is a digital signal, and the first circuit comprises at least one of a data latch circuit, a digital/analog conversion circuit, an output circuit, a level shifter circuit, and a decoder circuit, which use outputs of the unit circuits.

Claim 13 (Previously Presented): A display device, comprising:

MAEDA et al.
Serial No. 10/714,935
Response to Office Action dated April 8, 2008

a plurality of data signal lines;
a plurality of scanning signal lines intersecting with the data signal lines;
pixels provided for each pair of the data signal lines and the scanning signal lines;
a scanning signal line driving circuit for driving the scanning signal lines; and
a data signal line driving circuit comprising a sampling section for driving a plurality of data signal lines by sampling image data from an image signal according to a selection signal sequentially outputted from a shift register block so as to transfer the image data to the data signal lines,

wherein:

the shift register block of the data signal line driving circuit comprises:

at least one system of a first shift register comprising a plurality of spaced-apart, cascade connected unit circuits and outputting an input signal in response to a clock signal, the first shift register sequentially outputting a selection signal from output-stages comprised of the unit circuits, wherein a first circuit which is not one of the unit circuits of the first shift register is disposed in the physical space between a unit circuit of a preceding output stage and a unit circuit of a following output stage and the first circuit is not involved in operation of the first shift register so that an output of the first circuit is not supplied to any of the unit circuits of the first shift register.

Claim 14 (Original): The display device as set forth in claim 13, wherein:

MAEDA et al.
Serial No. 10/714,935
Response to Office Action dated April 8, 2008

the data signal line driving circuit and the scanning signal line driving circuit are formed on a substrate on which the pixels are formed.

Claim 15 (Original): The display device as set forth in claim 14, wherein:

the pixels, the data signal line driving circuit, and the scanning signal line driving circuit include active elements, respectively, each of which is made of a polysilicon thin film transistor.

Claim 16 (Original): The display device as set forth in claim 15, wherein:

the active elements are formed on a glass substrate at a process temperature of not more than 600°C.

Claim 17 (Previously Presented): A shift register block comprising:

a first shift register comprising a plurality of cascade-connected unit circuits for sequentially propagating an input signal therethrough in response to a clock signal, the unit circuits of the first shift register being linearly disposed so that physical spaces are provided between each adjacent pair of unit circuits; wherein

circuits other than unit circuits of the first shift register are disposed in the physical spaces between adjacent unit circuits of the first shift register,

MAEDA et al.
Serial No. 10/714,935
Response to Office Action dated April 8, 2008

wherein outputs from the respective other circuits are not supplied to any of the unit circuits of the first shift register.

Claim 18 (Previously Presented): The shift register block according to claim 17, wherein the other circuits comprise waveform processing circuits.

Claim 19 (Previously Presented): The shift register block according to claim 17, wherein the other circuits comprise unit circuits for a second shift register different from the first shift register and one of the unit circuits for the second shift register is disposed in one of the physical spaces.

Claim 20 (Previously Presented): A display device comprising the shift register block according to claim 17.

Claim 21 (Previously Presented): The shift register block as set forth in claim 1, wherein the unit circuits for the first shift register are disposed linearly with the first circuit.

MAEDA et al.
Serial No. 10/714,935
Response to Office Action dated April 8, 2008

Claim 22 (Previously Presented): The signal line driving circuit as set forth in claim 8, wherein the unit circuits for the first shift register are disposed linearly with the first circuit.

Claim 23 (Previously Presented): The data signal line driving circuit as set forth in claim 9, wherein the unit circuits for the first shift register are disposed linearly with the first circuit.

Claim 24 (Previously Presented): The display device as set forth in claim 13, wherein the unit circuits for the first shift register are disposed linearly with the first circuit.

Claim 25 (Currently Amended): The shift register block as set forth in claim 17, wherein the unit circuits for the first shift register are disposed linearly with the circuits other than the unit [[units]] circuits of the first shift register.

Claim 26 (Previously Presented): A data signal line driving circuit comprising:
a first shift register comprising a plurality of cascade-connected first unit circuits for sequentially propagating a first input signal therethrough in response to a first clock signal; and

MAEDA et al.

Serial No. 10/714,935

Response to Office Action dated April 8, 2008

a second shift register comprising a plurality of cascade-connected second unit circuits for sequentially propagating a second input signal therethrough in response to a second clock signal, wherein

the second unit circuits are linearly aligned with the first unit circuits, and

the second unit circuits disposed in physical spaces between the first unit circuits.

Claim 27 (Currently Amended): The data signal line driving circuit according to claim 26, further comprising:

first waveform processing circuits each respectively coupled to a single one of the first unit circuits; and

second waveform processing circuits each respectively coupled to a single one of the second unit circuits, wherein

the second waveform processing circuits are linearly aligned with the first waveform processing circuits, and

the second waveform processing circuits are disposed in physical spaces between the first waveform processing circuits.

Claim 28 (Currently Amended): The data signal line driving circuit according to claim 26, further comprising:

MAEDA et al.

Serial No. 10/714,935

Response to Office Action dated April 8, 2008

first waveform processing circuits each respectively coupled to a single one of the
first unit circuits; and

second waveform processing circuits each respectively coupled to a single one of
the second unit circuits, wherein

the first and second waveform processing circuits are linearly aligned with the first
and second unit circuits, and

the first and second waveform processing circuits are disposed in physical spaces
between the first and second unit circuits.